

REMARKS

Claims 9-33 are pending in the present application. Reconsideration and withdrawal of the present rejections in view of the comments presented herein are respectfully requested.

Rejections under 35 U.S.C. 103(a)

Claims 9-19, 22-30 and 33 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Dukler (WO 00/78556) in view of Nagashima (US 4,148,968), and claims 20, 21, 31, and 32 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over the same combination of references, and further in view of Yanaka (US 2003/0068575). The Examiner contends that it would have been obvious to use the chemical reaction of Nagashima for one of the image layers of Dukler so that the image is completely fixed and is obtained with no waiting time. However, as explained below, neither of these combinations of references renders the present claims obvious.

Dukler describes a toner or ink composition comprising a conventional particulate toner or ink dye, and an invisible component, for example a fluorescent toner or dye that becomes visible when illuminated with ultraviolet light. The invisible component acts as a security feature that helps to confirm the authenticity of a printed document. In one embodiment, the printing composition includes a particulate toner and a fluorescent labeling dye (page 9 line 2 to page 11 line 2). The toner and the dye are mixed in a solution. The dye then crystallizes by precipitation onto the surface of the toner particles. The solvent is then evaporated to form a dry toner powder in which the toner particles are bonded to the dye crystallites (see page 10 lines 13-15 and page 10 line 24 to page 11 line 2). When this printing composition is applied to a substrate in a printing process, the visible toner particles form a toner image that sits on the surface of the substrate. The fluorescent dye crystallites are bonded to the surface of the toner particles. Thus, if the toner image is removed, for example with a scalpel, the fluorescent dyes will also be removed. Therefore, the printing composition described in Dukler does not form a security feature that is detectably retained in or on the substrate in the event of fraudulent alteration or removal of the toner image, as recited in present Claims 9, 10 and 16. Thus, Dukler is not concerned with preventing the fraudulent alteration of documents by removal of a toner image.

In addition, the toner composition of Dukler does not include a reactant and the substrate does not include a complementary reactant that reacts with the reactant to form a recognizable security feature, as recited in present Claims 9, 10 and 16. In particular, at page 2, lines 9-10, Dukler states that *"it should be understood that the invention is applicable to any substrate..."*, but neither teaches nor suggests a substrate that includes a complementary reactant, wherein the

dispersed particulate toner is applied to the printable substrate form a toner image, wherein the reactant is reactable with a complementary reactant to produce a recognizable security feature that is detectably retained in or on the substrate in the event of fraudulent alteration or removal of the toner image as presently claimed.

Furthermore, Dukler does not disclose a liquid toner composition comprising a fine particulate toner dispersed in a liquid vehicle, as recited in present Claims 9, 10 and 16. Dukler only discloses a dry toner powder suitable for use in laser printers (Examples 1 and 2 on pages 11 and 12) and a liquid ink for use in ink-jet or bubble-jet printers (Example 3 on page 12).

At page 2 of the Office Action, the Examiner states "Dukler discloses a method of printing ..., wherein the method includes a liquid toner ..." Although both inks and toners are mentioned (page 4, paragraph 1), there is no mention of a liquid toner. It should be noted that all toner compositions disclosed in Dukler are dry toner powders: none of them are liquid toners.

Thus, Dukler does not disclose ant of the following features:

- a liquid toner composition comprising a fine particulate toner dispersed in a liquid vehicle
- a security ingredient which is a reactant
- a printable substrate that carries a complementary reactant
- wherein the reactant is reactable with a complementary reactant to produce a recognizable security feature that is detectably retained in or on the substrate in the event of fraudulent alteration or removal of the toner image

Nagashima relates to a method of electrophotography that avoids the use of pigmented toner particles. According to Nagashima, such particulate toners have problems with dirt and fixation to the substrate (column 1 lines 38-58). According to the method described in Nagashima, a first color forming agent is deposited on a substrate and then a second color forming agent is transferred onto the substrate electrophotographically. The first and second color forming agents are both colorless at this stage, and heat is then applied causing the color forming agents to melt and react with one another to form a colored image, as shown in Figure 2 and as described at column 13 lines 2-13. Nagashima does not disclose a liquid toner comprising a fine particulate toner dispersed in a liquid vehicle. Furthermore, the composition described in Nagashima is not suitable for use in a liquid toner printing process. In a liquid toner printing process, the liquid toner is applied to a substrate and is then allowed to cool so that it solidifies and adheres to the substrate. In Nagashima, after the color forming agents have been applied to the substrate, they must be heated so that they melt and react to form a colored image. Such a composition is not suitable therefore for use in a liquid toner printing process, in which the toner is allowed to cool after being applied to the substrate. Furthermore, Nagashima produces only a single image, and is

not concerned with security issues, in particular with the fraudulent alteration or removal of a toner image.

Thus, Nagashima does not remedy the foregoing deficiencies of the Dukler reference. Nagashima clearly does not teach anything about a liquid toner comprising a fine particulate toner dispersed in a liquid vehicle. Moreover, Nagashima actually teaches away from a liquid toner printing process because the process of Nagashima requires the application of heat after transferring the composition to the substrate, whereas a liquid toner printing process requires that the toner is allowed to cool rapidly after application so that it can solidify and adhere to the substrate. Therefore, the combination of Dukler with Nagashima would not lead one having ordinary skill in the art to the liquid toner digital press imaging system or anticounterfeiting method recited in claims 9/10 and 16, respectively.

In view of the above remarks, it would not be obvious to combine the teachings of Dukler and Nagashima, for at least the following reasons:

- Dukler relates to a process in which a visible toner image is formed in combination with an invisible secondary image. In Nagashima, the image formed by the color forming agents is visible. Nagashima does not disclose a method of producing an invisible image. Nagashima does not therefore meet a primary requirement of Dukler.
- Dukler requires that the printing process can be applied to any substrate (page 2 lines 9-10). Nagashima requires the use of a special substrate. Nagashima does not therefore meet another important requirement of Dukler.
- Nagashima is concerned with a printing process that avoids the use of a particulate toner (see the discussion of the problems associated with the use of dry particulate toners at column 1, lines 29-58). It would therefore be contrary to the aims of Nagashima to combine that process with the process of Dukler.

As noted in MPEP § 2143, “The rationale to support a conclusion that the claim would have been obvious is that all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination yielded nothing more than predictable results to one of ordinary skill in the art.” *KSR v. Teleflex*, 550 U.S. at 398, 82 USPQ2d at 1395. As discussed above, neither Dukler nor Nagashima disclose or suggest a liquid toner comprising a fine

particulate toner dispersed in a liquid vehicle. Thus, even when combined, these references would not produce the present invention. Yanaka is relied upon for its alleged teaching of specific chromogenic materials, and of magnetic or conductive security materials. Thus, Yanaka does not remedy the deficiencies in the teachings of Dukler and Nagashima. Accordingly, the combination of Dukler and Nagashima does not support a *prima facie* showing of obviousness with respect to the presently pending claims. Since claims 9, 10 and 16 are nonobvious over these combinations of references, then claims 11-15 and 17-33 are also nonobvious.

In view of the comments presented above, Applicants respectfully request reconsideration and withdrawal of the rejection under 35 U.S.C. § 103(a).

CONCLUSION

Applicants submit that all claims are in condition for allowance. Should there be any questions concerning this application, the Examiner is respectfully invited to contact the undersigned at the telephone number appearing below.

Respectfully submitted,

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